National Institute of Environmental Health Sciences

Extreme heat arrangements in South Australia: An assessment of trigger temperatures

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Abstract:

ISSUE ADDRESSED: The high mortality and morbidity associated with the 2009 heat wave across South Eastern Australia highlighted the need for effective heat-related health promotion and preventive strategies. The adverse health effects of extreme heat are largely preventable, and heat-related health promotion can advise the public about the dangers of hot weather and how to reduce health risks. The South Australian State Emergency Service has outlined a co-ordinated response system in their Extreme Heat Arrangements for South Australia. This paper evaluates the health impacts at the temperature trigger levels incorporated in this plan. METHODS: Heat events in Adelaide between 1994 and 2009 were compared in terms of heat duration, heat intensity and their impact on mortality and ambulance call-outs.The health impacts for events meeting specific temperature triggers were estimated. RESULTS: Individual heat events varied in terms of estimated excess mortality and ambulance call-outs. Increased mortality was associated with heat events of 3 or more consecutive days with maximum temperature (T(max)) > or Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 43 degrees C or average daily temperature (ADT) > or Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 34 degrees C, while ambulance call-outs increased significantly at lower T(max) levels.The two events reaching the temperature triggers for an extreme heat warning were associated with a 44% (95% CI 26-63%) increase in mortality. CONCLUSIONS: The results support the temperature trigger for an extreme heat warning within the Extreme Heat Arrangements for Adelaide, and indicate a limited health impact at lower temperature triggers.

Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Public

Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified, Urban

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Australasia

Health Impact:

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified